Appendix B – Proposed Railroad Line and Transmission Line Map and Construction Guidelines

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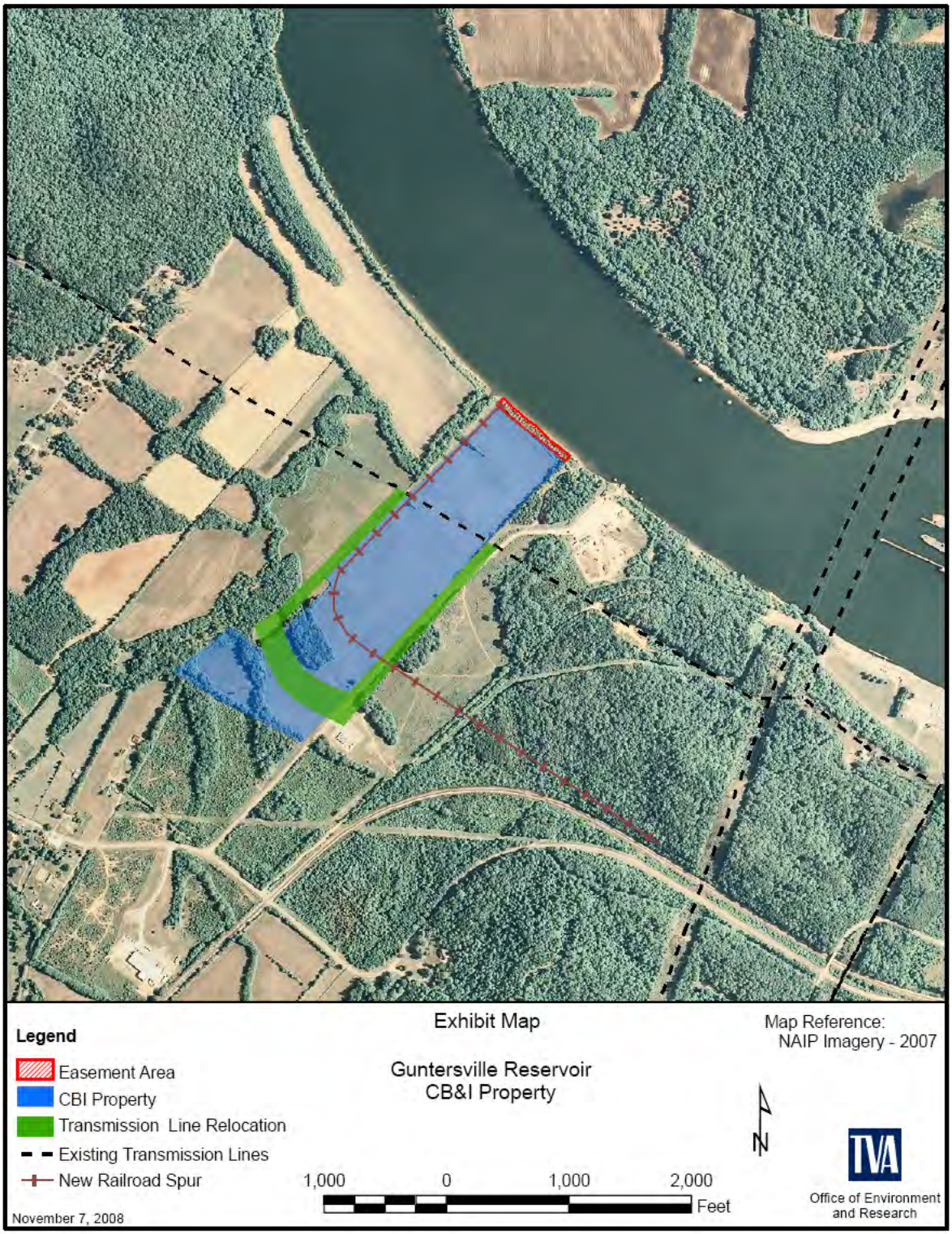
Exhibit Map
Guntersville Reservoir
CB&I Property
Map Reference:
NAIP Imagery - 2007
Legend
Easement Area
CBI Property
Transmission Line Relocation
Existing Transmission Lines
New Railroad Spur
1,000
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Feet
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November 7, 2008
TVA
Office of Environment and Research

CHICAGO BRIDGE AND IRON:
SYNOPSIS OF PLANNED EROSION AND SEDIMENT CONTROL MEASURES
CONCEPT PLAN

Erosion and sediment control best management practices (BMPs) will be designed to be implemented in accordance with the *Tennessee Erosion & Sediment Control Handbook* (Handbook) (TDEC 2002) and the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Associated with Construction Activities, Permit No. TNR100000. A toolbox of BMPs will be designed to function in concert or treatment trains to control potential storm water pollutants. In addition, BMPs will be implemented in phases so that the correct BMP selection and implementation occur with the appropriate stage of construction and site-development activities.

The project storm water pollution prevention plan is being developed for submittal, which will address several distinct phases of BMP implementation. These phases of BMP implementation are related to construction activities and stages of site development.

The first phase will primarily include the installation of perimeter controls prior to clearing, grading, and related land-disturbance activities. Phase 1 BMPs may include construction exit, silt fencing, vegetative buffers, diversions, temporary sediment traps and basins, and wattles, etc. Although perimeter control BMPs will be initiated during Phase 1, it may be necessary to maintain some of these measures throughout construction activities. One of the proposed perimeter controls to be designed is a sheet pile sediment and turbid water containment barrier to be installed in the Tennessee River encircling and outside the dock construction activities.

The second phase will primarily constitute site filling and grading along with construction of the administration building, fabrication facility building, river barge dock facility, railroad, roadways, parking areas, and the permanent storm water management system. During Phase 2, in accordance with the NPDES permit, specifications will be included to initialize stabilization of denuded soil surfaces as soon as possible in portions of the site where construction activities have temporarily or permanently ceased. Stabilization measures during Phase 2 may include vegetation preservation utilizing “just in time clearing/grading” and “fingerprint” clearing, soil roughening, temporary and permanent vegetation, decorative landscaping, maintenance of vegetative buffer zones, and paving and completion of structures such as parking areas, buildings, roadways, and the railroad. Progressive stabilization or “stabilize as you go” procedures will be specified to be made as much a part of the construction sequencing as possible. During Phase 2, planting and establishment of permanent vegetation will be specified as compatible with season and stage-of-site development. The final grade will be specified to be achieved as soon as practicable followed by appropriate stabilization procedures. As construction progresses, temporary sediment traps and basins installed during earlier stages of construction can be abandoned after construction of the replacing sediment basins or storm water treatment systems. In accordance with the permit, sediment traps can be used below disturbed areas where total contributing area is less than 10 acres. When total contributing area is greater than 10 acres, sediment basins are planned to be utilized. Design storage volume and discharge structures will be in accordance with the criteria and requirements of the “Handbook.” Since the site is relatively flat, site drainage or dewatering will be facilitated by temporary pumping of water from collection points and discharging the evacuated water through sediment filter bags/dewatering BMPs. The operation of sediment filter bag will be designed to be in accordance with the “Handbook.” Dewatering will be specified so as not

to cause visually apparent color or turbidity in the streams associated with the site. The construction and installation of the permanent storm water management system during Phase 2 will require protection with storm water conveyance BMPs that will be implemented and maintained. These storm water conveyance BMPs will include inlet and outlet protection, check dams, riprap, and other stabilization measures that will be designed to provide erosion-resistant surfaces and reduce discharge velocity. Appropriate inlet protection will be designed to allow implementation in stages that provide sediment removal from storm water drainage for the corresponding stage of inlet completion.

The last phase will involve final site stabilization measures along with completion of the functioning permanent storm water management system that discharges storm water through the on-site treatment system. Although achieving and maintaining a dense stand of permanent vegetation during Phase 3 is part of "Final Stabilization Measures," topsoiling and the establishment of permanent vegetation should be completed prior to initiation of Phase 3.

Currently, the owner desires and is pursing the option of LEED (Leadership in Energy and Environmental Design) Certification. If the project is LEED certified, additional permanent and temporary storm water controls will be designed to be incorporated into the project.

The anticipated BMPs to be utilized during construction may include:

- Buffer Zone
- Surface Roughening
- Disturbed Area Stabilization With Mulch
- Disturbed Area Stabilization With Temporary Vegetation
- Erosion Control Blankets and Matting
- Polyacrylamide (PAM) temporary soil stabilization
- PAM flocculent in treatment of turbid discharges
- Check Dam [Stone Check Dams and Rock (Filter) Dams]
- Wattle (excelsior for upland areas and coir for wet areas or frequently submerged areas)
- Construction Exit
- Construction Road Stabilization
- Dewatering Structures
- Diversion Structure
- Sediment Filter Bag
- Filter Ring
- Riprap
- Sediment Basin
- Sediment Trap
- Silt Fencing
- Storm Drain Inlet Protection
- Storm Drain Outlet Protection
- Temporary Stream Crossing
- Permanent Storm Water Treatment Facility

Tennessee Valley Authority
Transmission Construction Guidelines Near Streams

Even the most carefully designed transmission line project eventually will affect one or more creeks, rivers, or other type of water body. These streams and other water areas are protected by state and federal law, generally support some amount of fishing and recreation, and, occasionally, are homes for important and/or endangered species. These habitats occur in the stream and on strips of land along both sides (the streamside management zone [SMZ]) where disturbance of the water, land, or vegetation could have an adverse effect on the water or stream life. The following guidelines have been prepared to help Tennessee Valley Authority (TVA) Transmission Construction staff and their contractors avoid impacts to streams and stream life as they work in and near SMZs. These guidelines expand on information presented in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities.*

Three Levels of Protection

During the preconstruction review of a proposed transmission line, TVA Environmental Stewardship and Policy staff will have studied each possible stream impact site and will have identified it as falling into one of three categories: (A) standard stream protection, (B) protection of important permanent streams, or (C) protection of unique habitats. These category designations are based on the variety of species and habitats that exist in the stream as well as state and federal requirements to avoid harming certain species. The category designation for each site will be marked on the plan and profile sheets. Construction crews are required to protect streams and other identified water habitats using the following pertinent set(s) of guidelines:

(A) Standard Stream Protection

This is the standard (basic) level of protection for streams and the habitats around them. The purpose of the following guidelines is to minimize the amount and length of disturbance to the water bodies without causing adverse impacts on the construction work.

Guidelines:

1. All construction work around streams will be done using pertinent best management practices (BMPs) such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 6, “Standards and Specifications.”

2. All equipment crossings of streams must comply with appropriate state permitting requirements. Crossings of all drainage channels, intermittent streams, and permanent streams must be done in ways that avoid erosion problems and long-term changes in water flow. Crossings of any permanent streams must allow for natural movement of fish and other aquatic life.

3. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that

would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Stumps can be cut close to ground level but must not be removed or uprooted.

4. Other vegetation near streams must be disturbed as little as possible during construction. Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will not be allowed in SMZs; however, a minimal amount of soil disturbance may occur as a result of clearing operations. Shorelines that have to be disturbed must be stabilized as soon as feasible.

(B) Protection of Important Permanent Streams

This category will be used when there is one or more specific reason(s) why a permanent (always-flowing) stream requires protection beyond that provided by standard BMPs. Reasons for requiring this additional protection include the presence of important sports fish (trout, for example) and habitats for federal endangered species. The purpose of the following guidelines is to minimize the disturbance of the banks and water in the flowing stream(s) where this level of protection is required.

Guidelines:

1. Except as modified by guidelines 2-4 below, all construction work around streams will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 6, “Standards and Specifications.”

2. All equipment crossings of streams must comply with appropriate state (and, at times, federal) permitting requirements. Crossings of drainage channels and intermittent streams must be done in ways that avoid erosion problems and long-term changes in water flow. Proposed crossings of permanent streams must be discussed in advance with Environmental Stewardship and Policy staff and may require an on-site planning session before any work begins. The purpose of these discussions will be to minimize the number of crossings and their impact on the important resources in the streams.

3. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Cutting of trees near permanent streams must be limited to those required to meet National Electrical Safety Code and danger tree requirements. Stumps can be cut close to ground level but must not be removed or uprooted.

4. Other vegetation near streams must be disturbed as little as possible during construction. Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will not be allowed in SMZs; however, a minimal amount of soil disturbance may occur as a result of clearing operations. Shorelines

that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible.

(C) Protection of Unique Habitats

This category will be used when, for one or more specific reasons, a temporary or permanent aquatic habitat requires special protection. This relatively uncommon level of protection will be appropriate and required when a unique habitat (for example, a particular spring run) or protected species (for example, one that breeds in a wet-weather ditch) is known to occur on or adjacent to the construction corridor. The purpose of the following guidelines is to avoid or minimize any disturbance of the unique aquatic habitat.

Guidelines:

1. Except as modified by Guidelines 2-4 below, all construction work around the unique habitat will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 6, "Standards and Specifications."

2. All construction activity in and within 30 meters (100 feet) of the unique habitat must be approved in advance by Environmental Stewardship and Policy staff, preferably as a result of an on-site planning session. The purpose of this review and approval will be to minimize impacts on the unique habitat. All crossings of streams also must comply with appropriate state (and, at times, federal) permitting requirements.

3. Cutting of trees within 30 meters (100 feet) of the unique habitat must be discussed in advance with Environmental Stewardship and Policy staff, preferably during the on-site planning session. Cutting of trees near the unique habitat must be kept to an absolute minimum. Stumps must not be removed, uprooted, or cut shorter than 0.30 meter (1 foot) above the ground line.

4. Other vegetation near the unique habitat must be disturbed as little as possible during construction. The soil must not be disturbed by plowing, disking, blading, or grading. Areas that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible, in some cases with specific kinds of native plants. These and other vegetative requirements will be coordinated with Environmental Stewardship and Policy staff.

Additional Help

If you have questions about the purpose or application of these guidelines, please contact your supervisor or the environmental coordinator in the local Transmission Service Center.

Revision April 2007

Comparison of Guidelines Under the Three Stream and Water Body Protection Categories (page 1)

Guidelines	A: Standard	B: Important Permanent Streams	C: Unique Water Habitats
1. Reference	• All TVA construction work around streams will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 6, BMP "Standards and Specifications."	Except as modified by guidelines 2-4 below, all construction work around streams will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 6, BMP "Standards and Specifications."	• Except as modified by guidelines 2-4 below, all construction work around the unique habitat will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Construction and Maintenance Activities,* especially Chapter 6, BMP "Standards and Specifications."
2. Equipment Crossings	• All crossings of streams must comply with appropriate state and federal permitting requirements. • Crossings of all drainage channels, intermittent streams, and permanent streams must be done in ways that avoid erosion problems and long-term changes in water flow. • Crossings of any permanent streams must allow for natural movement of fish and other aquatic life.	• All crossings of streams must comply with appropriate state and federal permitting requirements. • Crossings of drainage channels and intermittent streams must be done in ways that avoid erosion problems and long-term changes in water flow. • Proposed crossings of permanent streams must be discussed in advance with Environmental Stewardship and Policy staff and may require an on-site planning session before any work begins. The purpose of these discussions will be to minimize the number of crossings and their impact on the important resources in the streams.	• All crossings of streams also must comply with appropriate state and federal permitting requirements. • All construction activity in and within 30 meters (100 feet) of the unique habitat must be approved in advance by Environmental Stewardship and Policy staff, preferably as a result of an on-site planning session. The purpose of this review and approval will be to minimize impacts on the unique habitat.

Comparison of Guidelines Under the Three Stream and Water Body Protection Categories (page 2)

Guidelines	A: Standard	B: Important Permanent Streams	C: Unique Water Habitats
3. Cutting Trees	• Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. • Stumps can be cut close to ground level but must not be removed or uprooted.	• Cutting of trees with SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. • Cutting of trees near permanent streams must be limited to those meeting National Electrical Safety Code and danger tree requirements. • Stumps can be cut close to ground level but must not be removed or uprooted.	• Cutting of trees within 30 meters (100 feet) of the unique habitat must be discussed in advance with Environmental Stewardship and Policy staff, preferably during the on-site planning session. Cutting of trees near the unique habitat must be kept to an absolute minimum. • Stumps must not be removed, uprooted, or cut shorter than 1 foot above the ground line.
4. Other Vegetation	• Other vegetation near streams must be disturbed as little as possible during construction. • Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will not be allowed in SMZs; however, a minimal amount of soil disturbance may occur as a result of clearing operations. • Shorelines that have to be disturbed must be stabilized as soon as feasible.	• Other vegetation near streams must be disturbed as little as possible during construction. • Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will not be allowed in SMZs; however, a minimal amount of soil disturbance may occur as a result of clearing operations. • Shorelines that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible.	• Other vegetation near the unique habitat must be disturbed as little as possible during construction. • The soil must not be disturbed by plowing, disking, blading, or grading. • Areas that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible, in some cases with specific kinds of native plants. These and other vegetative requirements will be coordinated with Environmental Stewardship and Policy staff.